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PROCEEDINGS

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PUBLICATION PROCEDURE FOR TECHNICAL PAPERS

by the Board of Direction,
Committee on Publications

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PUBLICATION PROCEDURE FOR TECHNICAL PAPERS

INTRODUCTION

With this pamphlet, the Society is introducing a revised procedure for distributing its technical papers. Basically, the program visualizes two classes; those papers—

I. Issued speedily, in generous quantity, and without editorial revision; and those—
II. Selected more deliberately from Class I, edited meticulously in accord with ASCE policy and standards, set in formal type, and indexed for permanent technical reference.

The processing of Class I papers is explained under six general headings:

Sect. A. Preparation of Manuscript
Sect. B. Technical Division Functions
Sect. C. Technical Publications Staff Functions
Sect. D. Standards of Production
Sect. E. Discussions.
Sect. F. Proceedings-Separates for Transactions.

Similarly, the processing of Class II papers is explained under six headings:

Sect. A. Standards of Acceptance
Sect. B. Mechanics of Acceptance
Sect. C. Technical Editing Standards
Sect. D. Indexing Standards
Sect. E. Reprints for Transactions
Sect. F. The Prize Competition

The final responsibility for the selection of Proceedings papers (Class I) lies with the Technical Divisions. These papers will be distributed automatically, about the fifteenth of each month, to Society members enrolled in the Division sponsoring the paper. Members not enrolled in a given Division must:

1. Order the papers sponsored by that Division by mailing a request to Society headquarters marking the coupon from Civil Engineering.
2. Subscribe for the papers of Divisions other than the member's first choice. Subscription fee is $2.00 per year per Division, or
3. Enter an annual subscription by which all Proceedings papers, from each Technical Division, will be supplied automatically, at a subscription price of $12.00 per year.

The final responsibility for the selection of Transactions papers (Class II) lies with the Board of Direction. Such papers will be available in:

(a) A bound volume, as in the past—at special rates to members, as provided by the agreement printed on the annual bill for dues; and as—

(b) Reprints from Transactions, offered at a single-copy rate, with special quotations for quantity orders.

I. PROCEEDINGS-SEPARATES

The fact that there will be no staff editorial control over Proceedings-Separates places a responsibility on the author to submit manuscript copy in conformity with the Society standards, as defined herein. A grasp of the total problem can be attained by considering five major steps:

1. Technical papers, prepared independently or with the encouragement and guidance of a Technical Division, are cleared by appropriate Division officers. Papers should be transmitted to the Manager of Technical Publications. The contributor is expected to conform as closely as possible to the minimum standards of preparation in Sect. A. Division Procedure and standards of acceptance, for most rapid handling, are described in Sect. B.
2. The ASCE staff will make an appropriate record of all papers submitted for publication, test them against the requirements of Sects. A and B and, if satisfactory, transmit them to the photo-lithographer (hereinafter called "printer") for printing and distribution, without editing or other handling at Society headquarters. Standards of transmission, for most rapid handling, are stated in Sect. C.
3. The printer will receive manuscripts from staff headquarters. Standards of production, for most rapid handling, are given in Sect. D.
4. After three calendar months of open discussion an author will be given an optional invitation to reply to criticism, and discussion will be produced by photo-lithography as detailed in Sect. E.
5. At each of its three meetings during a year, the Publications Committee will review all papers completed or in process as of that date and select enough to fill about one third of the space allotted to the current Transactions by limitations of budget, etc. The outstanding papers thus selected will be revised by the Society's editing standards, set in type and printed. Standards of acceptance for Transactions are described briefly in Sect. F.

Section A. Preparation of Manuscript

Proceedings-Separates (Class I) are to be scheduled for the most rapid possible production. This requires that the manuscripts approved by the Technical Division officers be complete and ready for printing when they reach staff headquarters. Standards of preparation are as follows:

1. As stated, a writer will prepare a paper that is ready for reproduction without change and without any reference to him for review, or approval, or proof-reading. The Division officers will superintend and direct any changes required for acceptance and, when acceptable, the manuscript will be mailed to the Manager of Technical Publications for printing.
2. The Society policies and standards for Transactions papers (given subsequently in Part II) should also guide the author in his preparation of copy for a Proceedings paper. In typing the title page, for example, follow the style demonstrated by Fig. 1, including the footnotes indicating the author's employment position.
3. In preparing papers, authors are requested to conform to the standard policy of the Society, by avoiding—
   (a) Introduction of personal references—laudatory or derogatory;
   (b) Commercial implication, seeming to advocate special or personal interests;
   (c) Extensive reprinting of material in print elsewhere, or about to be printed elsewhere;
   (d) Inclusion of illustrations without careful explanation of each; and

DESIGN CURVES FOR ANCHORED STEEL SHEET PILING

Walter C. Boyer,[1] J. M. ASCE
and Henry M. Lummis, III,[2] J. M. ASCE

SYNOPSIS

The design of anchored steel sheet piling bulkheads is a procedure normally encountered in many pier development projects. Although no design method has met with universal acceptance, it is felt that the "free support method" will yield a sufficiently rational approach for preliminary design considerations. A set of curves introduced with this paper will simplify preliminary design calculations.

INTRODUCTION

Anchored sheet piling depends for its stability on the embedment of the lower part of the sheeting assisted by an anchorage system as near to the top as is consistent with the durability of the anchor rods.[3] Such reactions, therefore, are yielding supports under the effects of the backfill and surcharge forces.[4] The sheeting must be of sufficient strength to sustain the lateral pressures involved.

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1. Asst. Prof. of Civ. Eng., The Johns Hopkins Univ., Baltimore, Md.
2. Engr. Sverdrup & Parcel, Cons. Engrs., St. Louis, Mo.
3. "Fundamentals of Soil Mechanics," by Donald W. Taylor, John Wiley & Sons, Inc., New York N. Y., 1948, p. 487.
4. "Design of Steel Sheet-Piling Bulkheads," by Raymond P. Pennoyer, Civil Engineering, Vol. 3, 1933, pp. 615-619.

Fig. 1. Typical First Page of Manuscript

(e) An excessive number of illustrations, especially photographs.

4. Except in unusual cases where the subject matter obviously requires greater space, papers shall be kept within 22 pages as printed in Transactions (equivalent to 12,000 words including space occupied by tables and illustrations. Manuscripts longer than 18,000 word-equivalents are referred to the Committee on Publications for closer study before clearance.

The following values can be used as a broad guide in estimating words or their equivalent space. A typed manuscript page is 27 lines long, double-spaced, with lines that do not exceed 5-3/8 in. in length. If the average line is longer, the following values are increased in proportion:

(a) If the type is "elite" (12 characters per in.), 40 manuscript pages will be required to fill 22 pages (12,000 words at 550 words per page);

(b) If the type is "pica" (10 characters per in.), 48 manuscript pages will be required to fill 22 pages (12,000 words at 550 words per page);

(c) For single-spaced manuscripts with 5-in. type lines, items a and b become 20 and 24 manuscript pages, respectively.

(d) Count 17 centered equations or one page of equations as equivalent to 550 words of text.

(e) A full page of illustrations or tables is equivalent to 550 words of text. Copy for a full page of illustrations or a full page of tables should be drawn within a frame 6-1/2 in. wide by 10-1/2 in. high, for direct reproduction.

5. Unless authors can supply illustrations specially prepared for direct reproduction, the excellence attained by a careful re-typing of the text will be largely lost because of the bad effect of nonuniform lines and lettering on the drawings. Line drawings should be especially prepared within a frame 6-1/2 in. wide by 10-1/2 in. high.

6. Line drawings should contain a very minimum of lettering. Descriptive matter should be included in the text, with drawings simplified to demonstrate only the points thus raised. The lines of a drawing should be black on white background; it should be borne in mind that they will be reduced in the ratio of 100 to 69. It is the intention to re-type all text matter for uniformity, economy of space, and appearance.

7. If the text matter is retyped, centered equations will be cut out of the manuscript and reduced with the printer's copy in the ratio of 100 to 69. To allow for this reduction, authors should letter centered equations with capital letters 3/16 in. high. All other symbols and characters in the equations should be in the proportions dictated by standard drafting practice. The procedure requires a virtual elimination of half-tone photographs. If a point in argument is to be demonstrated by a photograph, consideration should be given to substituting a line drawing if possible. In the half-tone reproduction of photographs, the extra time required to "strip in" copy on the offset negative is a deterrent to rapid reproduction.

8. Mathematics, line drawings, photographs, and complex ruled tables are reproduced directly from authors' copy. Greek letters and other special letter symbols should be formed with particular care, using black india ink on a white background. Tabular matter should also be typed within a frame 6-1/2 in. wide by 10-1/2 in. high, to be reduced in the ratio of 100 to 69. Photographic prints should likewise be arranged within the same size of frame, for a reduction in the ratio 100 to 69.

9. Discussers are authors under the meaning of this Section, and a discussion manuscript must meet the same standards as those of a paper. Discussions, however, are submitted directly to the Manager of Publications, who

will issue "Discussion Separates" from time to time. Please submit the original and one carbon copy. A Discussion Separate will contain matter applying to one Technical Division, and may contain current discussions of various papers. These Separates and papers will be numbered serially.

10. After it has been released and accepted, a paper will not be returned to an author for checking, except as provided in the preparation of Transactions papers (Part II). In most cases, solid text matter will be retyped by the printer for economy of space and uniformity of appearance; but in some cases (particularly mathematical, tabular, or illustrative text) the author's copy will be reproduced directly.

11. Essentially the foregoing instructions require preparation of manuscripts to a specified type page as follows:

(a) The typewriter used for preparation of the copy must be in good condition. It should be checked by a service man to make sure that the platen (roller) is not dented, and that the tension is properly adjusted. In typing papers containing extensive tabular or mathematical matter that may be photographed directly from the manuscript without retyping, it is recommended that typists use a typewriter ribbon such as the Miller-Bryant-Pierce Cardinal Brand, #102 formula, #40 ink, or its equivalent.

(b) Typewriters in most common use have one of two styles of type—pica, which prints at 10 characters per in.; and elite, which prints at 12 characters per in. For demonstration, both of these fonts appear in Fig. 2, the upper half being elite and the lower half pica. Also for demonstration, the upper half is deliberately done badly and the lower half well done. The elite type reveals an old ribbon, and a type design that is too delicate for the best photo offset reproduction. The pica type suffers for lack of good cleaning, but otherwise reproduces reasonably well.

The ruled frame measures 5-3/8 in. wide by 8-7/8 in. high, and either style of type can be fitted to it. The page number can be indicated lightly in pencil. A supply of this specially marked paper sufficient for one technical paper will be sent to an author free on request.

(c) In Proceedings, papers should be prepared according to the standard editing style required for Transactions, as described in Part II. This will be an aid to rapid processing of papers for the annual Transactions.

12. In his letter of transmission, the author should state explicitly that:

a—The manuscript has been presented for the exclusive use of the Society.

b—It has not been printed, in whole or in part anywhere else, and

c—It may be released to the Society's printer for re-typing and printing, as may be required by the conditions described herein.

B. Technical Division Functions

Requirements for the acceptance of Proceedings-Separates are described, as follows:

1. Technical Divisions originate all papers scheduled for use at Society Conventions. Division officers should request meeting contributors to mail two copies of their paper to the Manager of Publications. Papers selected for publication in Civil Engineering should not be duplicated in Proceedings-Separates, or vice versa. Directions for preparing papers for Civil Engineering are given in the Society's Official Register.

2. Adequately prepared meeting manuscripts received at staff headquarters not later than forty-five calendar days before the first Monday of the meeting week can be completed for distribution and oral discussion at the meeting itself. Three months of each year, such papers will take precedence over all others, regardless of chronological printing schedules.

returning shock wave, reflected from the earth's surface below should be reduced by one third when the reflected pressure on the underside of the deck is computed. Attention must be paid to the fact that the returning shock wave enters a region in which the over-pressure is continuously decreasing. Assuming the latter to remain constant is probably permissible for elevations up to about 100 ft with a shock of 24 lb per sq in., but this assumption will introduce serious error for greater heights or stronger shocks.

The pressure-time relations that are obtained for various elevations of a 510-ft span are shown in Fig. 1, in which the bridge deck elevation is expressed as h. It is apparent that the case of no reflection differs radically in its pressure-time relationship from the case of reflection from any commonly encountered height. The time required for the reflected shock to make itself increases with increasing elevation of the bridge, and the upward impulse furnished by the reflection becomes a progressively smaller percentage of the downward impulse as the elevation increases. The large upward forces exerted by the reflected shock waves may account for the phenomenon observed in Hiroshima and Nagasaki, in Japan, where even those bridges close to "ground zero" suffered little structural damage. Unfortunately,

Fig. 2— Example of Elite and Pica Type on a standard sheet

3. In preparing their technical programs, Division officers can clear a paper for publication as a Proceedings-Separate and instruct an author to mail the paper directly to the Manager of Technical Publications within the time set by Item 2. All meeting papers thus submitted must have Division clearance.

4. All other manuscripts of technical papers will be referred to the appropriate Technical Division for review and clearance to the Manager of Technical Publications.

5. In the development of publications schedules, preference will be given to ASCE members over non-members. The papers offered by a Division for photo offsetting in any year should not include more than 10% from non-members, as measured by the number of printed pages.

6. The Society will accept for distribution any paper cleared by the Technical Divisions without regard to the Transactions requirements that they include "something new or unusual in engineering which has not been published before." In other words, it is anticipated that Technical Divisions may dispense with long reviews by technical experts, merely examining papers to judge whether in general the paper is of suitable length; of interest to civil engineers; free from commercialism or personal self-interest; in a form suitable for direct reproduction, as specified in Sect. A.; and preferably written by ASCE members. Thus, it would be the sole responsibility of the Division to judge whether the primary subject of a paper is of a civil engineering nature and whether it is trivial or wildly eccentric.

7. Papers to be declined should be returned to the Manager, Technical Publications, for transmission to the author.

8. At regular intervals, the Technical Division will be required to examine its current published papers and recommend those which it considers most worthy of publication in the permanent Transactions.

C. ASCE Technical Publications Staff Functions

1. Until a technical paper has passed through the discussion stage, and has been closed by the author, the Manager of Technical Publications operates essentially as a "traffic manager." Technical papers from individuals are routed by the Manager of Technical Publications to appropriate Divisions for review and publication release. Meeting papers will originate with Divisions.

2. The Manager of Technical Publications will receive a paper from the Technical Division, examine it for form, as specified in Sects. A and B; if it meets minimum Board of Direction requirements, he will send the manuscript to the printer for immediate publication within the current deadline date. Fig. 3 illustrates the form used to transmit manuscripts from staff headquarters to the printer.

3. If a paper exceeds the specified maximum length of 18,000 word-equivalents (or if too many papers are longer than 12,000 word-equivalents), it will be referred to the Committee on Publications at its next regular meeting, which then passes on the paper's acceptability for publication as an exceptional case.

4. The Manager of Technical Publications will govern the flow of manuscripts to the printer to permit the most speedy and economical functioning. Staff personnel will not edit or revise manuscripts for photo-offset printing.

5. Discussions of a current technical paper will be received directly by the Manager of Technical Publications for a period of three months. Notice of the deadline date will be printed on the cover of each paper. All discussion manuscripts received will be grouped by Division, and a discussion

Date_____

AMERICAN SOCIETY OF CIVIL ENGINEERS, 33 W. 39th St., New York 18, N. Y.

FORM FOR ORDERING PHOTO-OFFSET PRINTING OF PROCEEDINGS-SEPARATES
(Editor, please prepare two carbon copies)

Mailing Label: Edwards Brothers (Attention Miss Serena Jamele)
109 East Thirty-first Street, New York 16, N. Y.

COVER COMPOSITION:

Proceedings-Separate Number:_____

Month of issue:_____

Title:_____

Author:_____

Division Sponsor:_____

Presented at:_____

Meeting Dates:_____

Discussion Closes:_____

MAILING INSTRUCTIONS:

Edition:_____

Manuscript pages:_____

General:_____

_____

_____

_____

TEXT COMPOSITION:

ILLUSTRATIONS:

TABLES:

MATHEMATICS:

GENERAL REMARKS:

Fig. 3--Example of Form for Transmitting Manuscripts to the Printer

reprint (including authors' closing comments) will be issued by photo offset, as the manuscripts become available.

6. Periodically, the Manager of Technical Publications will present status reports to the Publications Committee. He will transmit to the Publications Committee the recommendations of the Division as to exceptional papers recommended by Divisions to be included in the current volume of Transactions.

7. With the papers released by the Publications Committee, as provided by Sect. D-6, the staff will edit copy for Transactions, enforcing the Society's standard rules as to form and content (see Part II). Such edited papers will be set in type and printed by formal printing methods, as in the past. They will be bound appropriately, indexed, and issued as the Society's contribution to significant technical literature.

D. Standards of Production.

1. In order to promote uniformity, all papers received by the printer should have been set up on a typewriter for photo-offset reproduction from copy supplied by the author.

2. When a paper is transmitted to the printer, the ASCE staff will supply all standard information by which the cover can be processed simultaneously with the text matter, also indicating exceptions to standard instruction (See Fig. 3). Orders to send manuscripts to press will include editions and special instructions for delivery.

3. Papers will be grouped by Divisions and mailed automatically to registered first-choice members of the Division. No added charge will be made for this automatic mailing.

4. Subscriptions for all the papers of a Division other than the first-choice Division are offered at $2.00 per Division per year, with a maximum of $12.00 per year as the subscription rate for all Proceedings papers published.

5. Periodical subscriptions will be mailed from the printer's plant, including also the individual mailing of copies in the month of issue. Single-copy sale of individual papers will be controlled through the coupon published in Civil Engineering, and such coupon mailing will be done by the printer.

E. Discussions

1. Discussers will send the original and one carbon copy of their contributions directly to the Manager of Technical Publications (Sect. C-5).

2. Standards for discussion copy will be the same as for papers (see Sects. A and B).

3. A discussion period of three months from the first date of issue of a paper will be allowed.

4. A group of discussions, possibly applying to several papers from a given Division, will be published as a discussion Separate from time to time. These discussion Separates will include also the authors closing comments.

F. Proceedings-Separates for Transactions

1. When discussion of a paper has been completed, the appropriate Division will be invited to file a recommendation with the Publications Committee stating whether the paper satisfies the superior standards that would qualify it for inclusion in Transactions.

2. The Publications Committee will select the best papers three times each year from these recommendations.

3. Papers on one list recommended by a Technical Division, and declined, can be presented once again at the next meeting of the Committee.

4. A series of Proceedings-Separates covering an over-all topic can be arranged as a symposium in Transactions.

The prize competition for papers in Transactions will be administered as before.

II. TRANSACTIONS PAPERS

Introduction

By a change in Society publication policy, adopted by the Board of Direction in October, 1949, the problem of selecting and perfecting technical papers for Society publication as Proceedings-Separates was made the principal responsibility of the various Technical Divisions, with general supervision and control by the Board's Committee on Publications. This new form of publication was instituted in February, 1950.

In March, 1953, the modification described in Part I was put into effect; namely, the use of photo-offset printing to expedite and liberalize the production of technical papers in the discussion stage. The author and the sponsoring Technical Division are the sole judges of papers in this stage; in the preparation of papers for Transactions, however, the Board of Direction will maintain its usual strict control over style and content. Authors preparing papers for Proceedings (Part I) will do well to keep in mind the standards of Transactions papers. Material in Part II is intended to explain conditions applying to the production of the more permanent record. The material is treated under three main headings:

A—Standards of Acceptance
B—The Mechanics of Acceptance
C—Technical Editing Standards

A. Standards of Acceptance

The general principles governing the handling and approval of technical papers for Society publication in more permanent form are defined in this section. The procedure leading to acceptance and the mechanics of preparing the manuscripts are treated.

1. As stated in Part I, all technical papers published by the Society are subject to review, selection, and recommendation by the appropriate Technical Division. It is the responsibility of each Technical Division to review material proposed for publication and submitted for consideration, to select such material which the Division recommends for publication, and to transmit it to Society Headquarters—Attention: Manager of Technical Publications.

2. Some papers considered acceptable by a Division may be deemed more appropriate for publication in Civil Engineering, than under the classification of Technical papers. Such papers may be so recommended and transmitted to Society Headquarters—Attention: Editor of Civil Engineering. The Publications Committee can make no prior commitment to the Technical Division to assure the publishing of any paper in Civil Engineering. By Board action, recommended by the Publications Committee, the content of Civil Engineering is the responsibility of its Editor, acting under the direction of the Executive Secretary and under policies established by the Publications Committee. If not acceptable for Civil Engineering, such manuscripts will be returned to

the Division. Papers presented at Society or Division meetings are considered available first for use in Civil Engineering. All papers to be delivered at Society conventions should be filed at Headquarters at least 45 days before the date of presentation. Those not selected for Civil Engineering, if so cleared by the Division, will be produced as Proceedings-Separates (see Part I), in time for oral presentation at the meeting.

3. Each fall the Publications Committee will assign annual page quotas to the respective Divisions, within which will be included papers, discussions, and reports. With these quotas in mind, each Division will submit a list of its recommendations for Transactions every four months, under the guidance of the Manager of Technical Publications, the latter supplying a list of current papers available for such clearance. Within the Division quota requirements, the Committee reserves the right to reject a paper if it fails to meet Transactions standards.

4. The Publications Committee will exercise general control over material to be published in Transactions. The staff editors will edit the recommended papers in accord with its standard policy and style.

5. Each Division will designate either an officer or a member to correspond with the Publications Committee and the editorial staff relating to technical papers. It will set up its own organization and procedures for review and selection of Transactions papers.

6. All papers recommended by the Division and accepted by the Publications Committee for Transactions will be edited by the editorial staff for final publication. In the Transactions review stage, the Division editors can assist the editorial staff by noting:

a. The features most worthy of emphasis;

b. The material that can be abbreviated or eliminated advantageously;

c. The points where presentation may be improved; and

d. The modifications required to perfect the technical presentation and to make the manuscript and drawings conform to the requirements set forth in this guide. The edited Transactions paper will be cleared with the author before printing.

7. Except in unusual cases where the subject matter obviously requires greater space, papers shall be kept within 22 pages as printed in Transactions (equivalent to 12,000 words, including space occupied by tables and illustrations); and the total of discussions of each paper, including closures, within 10 pages in Transactions (6,000 words including space occupied by tables and illustrations).

8. The following rules for determining the acceptability of Transactions papers concern content or substance. Transactions papers shall be:

a. Of interest and constructive value, primarily to civil engineers.

b. Distinguished by their profitable discussion during the time that discussion was open.

c. Substantially new, not readily available. (Private distribution is not considered "available.") Distribution of a paper to libraries, etc., in quantities of 400 or 500 copies (for example) will be considered as having made the paper "available."

d. Novel or original, as an arrangement of existing knowledge not previously made.

e. Free from evident commercialism or personal interest.

f. Offered exclusively for Society use.

g. Clear and concise.

h. Free from individual personalities.

Transactions papers shall not:

i. Controvert established facts.

j. Be speculative or alien to Society goals.

k. Advocate special or personal interests.

l. Comprise mere collections of data or methods (that is, handbook or textbook matter).

9. The following suggestions to authors refer to details of arrangement, expression, and makeup:

a. The photo-offset Proceedings-Separate, and the original manuscript will be used in preparing edited copy for Transactions.

b. Number pages consecutively, with tables and illustrations at the end. Indicate in the margin of the text the proper position for tables and illustrations.

c. Tables and illustrations should be (1) numbered consecutively, (2) justified by explicit text references, and (3) given suitable titles and captions.

d. Preface manuscripts by a brief synopsis (300 words or less) indicating to a busy reader what significant information he may expect to find in the paper.

e. Write in the third person.

f. Use standard letter symbols (Society and ASA, etc.).

g. Use brief titles (for indexing, etc.); maximum length is fifty characters (letters and spaces).

h. Provide a separate title page giving authorship.

i. Provide headings and sub-headings for ease of reading and understanding.

j. Confine the main text to a clear exposition of the principal thesis; supplementary matter, such as mathematical development, can often be put in appendixes.

k. Be sparing in the use of quoted matter.

l. Do not duplicate material in the text, tables, or illustrations.

10. The following details are designed to expedite the editing and printing of tables:

a. Type each table on a separate sheet.

b. Number tables consecutively in arabic numerals.

c. If there are footnotes, use superscript letters to refer to them.

d. Capitalize all principal words in column headings.

11. Drawings or illustrations are the most expensive part of a printed work. They vary in cost directly with the complexity of the drawing and the area of the printed cut.

12. In Transactions illustrations are preferably arranged to be read without turning the page. Since the type line is 4-1/2 in., this is the optimum width of the finished cut. The range is from 3 in. to 9-1/2 in., the latter being across two facing pages and requiring that some of the details encroach on the center "gutter." For drawings requiring some extra space, it is feasible to utilize the full height of the page (7-1/4 in.). The larger illustrations should also read direct from the bottom, or normal eye position; but the size is also useful for the wider-than-regular drawing, in which the page is turned sidewise to accommodate a resulting cut of 7-1/4 in. maximum width and 4-1/2 in. maximum height (allowing 1/4 in. for caption within the regular 4-1/2 in. page).

13. The foregoing dimensions refer to finished, or printed, sizes. Original drawings in ink, if thus made to Society standards of size and delineation for

photo-offset printing, can be used to great advantage in the Transactions printing. They should always be submitted without folding. If all details (particularly including the lettering) are well done, the drawings may be used as engravers' copy direct. This is a major desideratum.

14. The following are suggested to produce the best illustrations:

a. Number figures consecutively in arabic numerals.

b. Transactions figure captions will be prepared by the printer so it is not necessary to letter them on the drawing. A list of figure captions on a separate sheet is preferable.

c. Be sure that the figure number appears on each tracing, print, or photograph.

d. Photographs are reproduced as halftones and can be made from clear glossy prints only. They will be printed horizontally and page-width if practicable, depending on the detail shown. They should be numbered on the face (margin). Captions should be included in the list of figure captions.

e. For either photo-offsetting or Transactions, line drawings, graphs, etc., must be clear, sharp, and black-on-white. Mimeographed or photostat copies, blueprints, black and white prints, multi-lithed, or offset printed copies are seldom reproducible. If the dimensions are correct, the original tracing or drawing in ink is the best copy.

f. Working or construction drawings are seldom useful. They contain too much detailed information; they are too large and therefore too expensive to reproduce in legible form. The ideal copy is a simple drawing designed to indicate the special ideas the paper intends to convey. Descriptive or explanatory information is best transferred to the text, for economy.

B. The Mechanics of Acceptance

This section covering the mechanics of evaluating papers for Transactions is given in the form of typical questions and answers.

1. Who has charge of Society publications? Fundamentally, the Board of Direction controls this as well as every other Society activity. On behalf of the Board, a standing committee of Directors (designated the Committee on Publications) is given full power. Ordinarily decisions of the Committee are final, but in extraordinary cases appeal is made to the Board itself. The Committee is further supplemented by the Secretary of the Society and a full-time member of the Society's editorial staff, who acts as the secretary of the Publications Committee and also as the Manager of Technical Publications.

2. Who submits manuscripts? The content and not the authorship determines the acceptability of a paper. As between two papers of equal merit, of which only one could be accepted for any reason, the manuscript written by a member would have preference over another by a non-member. Basically, the Society's technical program, supported by membership dues, is the medium through which members exchange technical ideas for their mutual advantage and the advantage of the profession. In fairness to Society members, it is expected that at least 90% of all available space shall be reserved for them. A limited number of papers by non-members will be accepted for Transactions.

3. What is the source of manuscripts? Technical papers in Transactions must first appear as Proceedings-Separates. Manuscripts to become Proceedings-Separates or discussions of printed papers should be submitted directly by authors addressed to the Secretary of the Society or to the Committee on Publications. These will be acknowledged and the papers will then be routed directly to the Division or Divisions concerned. Many other papers,

and perhaps possibly the greater number, will come to the Division directly, or will be solicited by the Division for its meeting held at the time of the Society conventions. In either case the Divisions' procedure will be the same (see Part I). Before the manuscript is subjected to detailed study, the author is requested to assure the Society, directly or through the Division, that the paper is in a large measure original with him and that it has not been published or distributed under other auspices. For many years, economy has dictated that technical information "readily found elsewhere" (see Part II, A-8-c) cannot be considered acceptable for Society printing.

4. What is the objective of Division study? The rapid and liberal procedures for Division review of Proceedings-Separates have been described in Part I. This liberal attitude is reversed in the Transactions stage, where it is intended that papers be cleared only after the most rigorous testing. The basic publication requirements for a Transactions manuscript have been given. In what follows, the Publications Committee gives practical advice on how the Divisions may best handle reviews for Transactions.

5. Who should review papers? In studying Proceedings-Separates for inclusion in Transactions, the Technical Divisions might well follow the former practice of the Committee on Publications, which has depended largely on a number of independent opinions secured from selected confidential reviewers. A file of expert reviewers should be developed by each Division and should be revised and classified continually, so that not only the man's specialized field but his particular training or interest in that field may be used to advantage.

6. How are reviewers best selected? The proper person to report on a paper should be a composite of the following:

a. An engineer particularly qualified by technical training and experience to judge the subject matter of the paper;

b. A person with a nice sense of discrimination who, from his wide acquaintance with the field, can judge relative values and the applications of principles;

c. One who shares the Society's ideals regarding the publication of the best material;

d. A man of high ethical standards who will treat the questions as confidential and will give an unbiased decision; and

e. A person not associated with the author and preferably not resident in his community.

7. How many reviewers are required for each paper? Even with the most careful selection, competent reviewers will not agree in every instance as to the quality of a manuscript. In fairness to the author, and particularly in fairness to the Society, a diversity in the source of reports is essential in the review of Transactions papers. At least three independent reports on each paper should be secured by the Division. Where a general concensus of opinion is impossible the inquiries should be extended as far as may seem reasonable. Discussions published as Proceedings-Separates should serve as an important guide.

8. What determines acceptability? Consideration of the reviewers' recommendations, diversification of subject matter, and available space in Transactions will govern the Divisions' recommendation to the Publications Committee. Acceptance would normally be voted in the order of the excellence of the available papers. Each year, available pages in Transactions are prorated to the various Divisions in accordance with the best judgment of the Committee of Publications. Similarly, the Division should distribute

its available quota among its various subjects on the basis of the greatest sum total of professional and technical service.

A special case occurs where an overabundance of otherwise suitable papers is available. In fairness to all concerned, but with the consent of the authors, the Division should then hold the surplus of such good papers in a deferred classification, awaiting the contingency that the necessary space may be available in a later period. Recommendation to the Publications Committee on such papers is then postponed.

C. Technical Editing Standards

General

1. For a paper to appear in Transactions, the following steps are necessary: (a) Review, (b) acceptance, (c) technical editing, (d) style editing, and (e) printing. The handling of review and acceptance has been covered in Sects. A and B. Thus Sect. C treats only the third step—technical editing.

2. The editors' first consideration is the fact that they are dealing with technical manuscripts whose purpose is to convey new 'deas or advances to civil engineers. Although latitude for personal style is quite permissible, the main emphasis is always on content rather than form. Since a short, simple treatment is most readily understood, each contribution should be adjusted by the editor to make it a brief, clear, factual, and dispassionate manuscript. Some of the devices and methods developed over the years by the Society's editorial staff for this purpose are detailed herein.

Text

3. Be Concise.—"Brevity is the soul of wit." In literature and, especially, engineering literature, a short statement is usually the straightest course between the minds of the writer and of the reader. Brevity is effective as well as economical.

4. Be clear.—The editor assumes the role of "dumbbell," who needs full explanation. Between two possible choices of expression, use the specific rather than the general. Try to visualize a reader's possible misunderstanding—anticipate and correct it. It is desirable to use a technical word for accuracy rather than a popular (or slang) one. Vernacular, although clear to engineers of one region, might be obscure to many readers throughout the world. Remember—your readers are assumed to be civil engineers in many specialized fields.

5. Avoid explicit repetitions.—Excessive re-use of the words should be eliminated. Alliteration can be either effective or tiresome. Repetitive sentence structure becomes tedious, particularly if all the sentences are relatively short. A variation of sentence structure and length makes for agreeable reading.

Because of space limitations data should be presented concisely. Let the author or the editor choose the best form in text, tables, or charts—and then eliminate the duplications. This does not rule out the interpretation of a chart or illustration—just the unnecessary repetition.

6. No personalities.—Control the extent of personal references, whether complimentary or derogatory. Moderate acknowledgments are permissible, but they must be short. No statement or inference should be permitted that even vaguely implies ignorance, lack of intelligence, bias, or any other

thought that may be construed as a reflection of the competence, character, ability, or personality of another. It must be remembered that the original paper sets the tone as well as the scope of discussions. The personality rule applies also to discussers who are expected to criticize only the content of a paper.

7. No relative time element.—Do not use "last year" or "recently," but rather be specific, by dates, remembering that Transactions, which is the ultimate goal, cannot include transient references.

8. Use the third person.—This is a sustained policy of the Society. The writer is implicit in his writing; he need not remind the reader continually that it is his idea or his expression.

The subject matter rather than its author needs emphasis. The use of third person style expresses this principle. At times it seems unavoidable to mention "the writer," but this practice lends itself to over-use, and then it becomes stilted and irritating.

9. Make the paper easy to read.—In addition to the foregoing methods for improving the text, there are other ways to enhance readability.

a. Short paragraphs.—These make a better looking and more attractive page. They encourage reading. Breaking a long paragraph is sometimes arbitrary, but usually there are more or less definite breaks in thought to suggest the proper points. Single-sentence paragraphs are not considered good. Paragraphs of uniform length can be tiresome. Try to vary the length with an upper limit of from 250 to 300 words.

b. Main and sideheadings.—A centered main heading serves both to identify the corresponding principal division of thought and to break the monotony of page appearance. Lesser divisions are shown by italic sideheads, and these are equally useful. The author may have introduced these heads, especially if he is proceeding from a logical and prepared outline. If not, the editor will do well to adopt this useful means of making the paper easier to understand. In rare cases, the outline of a paper requires finer division than is provided by main centered heads and italic sideheads. Then the editor uses, for further subordination, a regular or Roman type sidehead, such as that at the beginning of this paragraph. Centered headings are not permitted in discussions.

10. Use standard notation.—It irritates a technical reader to find that the author has abused his obvious privilege by changing an already established language for his subject and using different terms for standard ideas or items. Division Committees have attempted to crystallize practice in specific instances through the following Manuals of Engineering Practice:

Number	Title
2	Definition of Terms Used in Sewerage and Sewage Disposal Practice
11	Letter Symbols and Glossary for Hydraulics
15	Definitions of Surveying Terms
22	Soil Mechanics Nomenclature
23	Military Roads in Forward Areas (Division I, Section 1)
25	Hydraulic Models (Section VIII)
27	Pile Foundations and Pile Structures (Appendix A)

See also "Glossary: Water and Sewage Control Engineering" and "Recommended Practice and Standard Specifications for Concrete and Reinforced Concrete" (Chapter 1—Scope and Definition). The Society has collaborated with the American Standards Association in agreeing on some standard

notations—for example, American Standard Letter Symbols for:

Hydraulics (Z10.2-1942)
Mathematics (Z10F-1928)
Structural Analysis (Z10.8-1949)
Mechanics (Z10.3-1942)

Also, American Standard Abbreviations for Scientific and Engineering Terms (Z10.1-1941). An author will readily agree as to the desirability of a standardized and recognized language, of which the usage in reinforced concrete design is a splendid example. By directing him to some authorative or standard form he will readily accede to its use. A discusser must make his work conform to the author's notation or definition.

11. Text footnotes.—For clarity, footnote references in the text are indicated by superscript numbers. These numbers are presented in the order of their appearance, so that they can be found readily. Identical footnotes, mentioned on different pages are not repeated, but even if only the page reference of a formerly mentioned article varies, the entire footnote is given. Footnote descriptions should be full and explicit. Exact spelling of titles, authors, and publishers are needed, as well as accurate dates and page references. Careless footnotes cause endless trouble to editors, and they create misgivings in the mind of a serious reader.

12. Abbreviations.—It is unfair and unnecessary to burden an author with the responsibility for adherence to Society usage in the matter of abbreviations. Such details, and others of a somewhat similar import, are properly the concern of the editor.

13. Leave style editing to Headquarters staff.—Minor standardization of form before printing is called styling. This process results in consistency of usage and uniformity of treatment essential for a final collection of papers and discussions into a single volume, Transactions. Among the details handled are spelling, abbreviations, punctuation, and capitalization. Through many years the Headquarters editors have become accustomed to these standards. Hence they can be dismissed by the Division editors, and left to the editorial staff.

Tabulation

14. Size of tabulation.—The simplest kind of tabulations consists of a single series—items and numerical values, in two (never more than three) columns. It offers no difficulties of presentation. If convenient, it can be arranged double on the page, saving half the space. Such a list requires no table number or formal title.

More commonly the formal table has many columns of data, some of them with 4 or 5 digits, including a zero used before a decimal point when the number is less than unity. The over-all width of the table then determines its position, and this width may be governed by the digits of tabulation, or often by the complexity and number of column headings. If the worst combination is less than 96 digits wide (including allowance for vertical rules and blank spaces), the table can fit across the 4-1/2 in. width of page, and this is the preferred arrangement. If wider, but less than 154 digits, it can be turned at right angles and made to fit into the 7-1/4 in. height of page; to be read, it is turned clockwise and read from the right-hand side. A still wider table—up to about 205 digits—can be extended across two facing pages sidewise, a total width of 9-1/2 in. This is an extreme case, not too convenient, and hence to be avoided if possible.

15. Titles.—The caption of the table should indicate its coverage, its uses, and its limitations. Occasionally subcaptions are added to extend these general details as needed. In a simple table, the units may be given in the caption and then not in the numerical data.

16. Abbreviations.—As distinct from an engineering drawing, where abbreviations are used in relatively great number, abbreviation in technical papers should be used only in following a given numerical magnitude. Tables and illustrations in a technical paper are considered similar to exhibits in court cases and ideally should be complete, including fully written definitions rather than abbreviations. In the main title of the table or illustration, therefore, units are almost always spelled out. However, in the table headings and footnotes, abbreviations are tolerated because of space. In the text, phrases that recur often are abbreviated by stating the full spelling once, with the abbreviation in parentheses (thus: "American Society of Mechanical Engineers (ASME)").

17. Footnotes.—Exceptions or limitations of data or heading in tables can be designated best by a superscript letter and footnote. To avoid confusion with exponential powers, numbered footnotes are not used in tables. At the beginning of a paper or discussion, a footnote is used to identify the occupation of the author or writer (see Fig. 1). No other personalities are so identified.

18. Final Arrangement.—The editors will reduce tables to their simplest and shortest form.

Illustrations

19. Limiting sizes.—As with tabulations, a line drawing best fits across the page (4-1/2 in. width); if this is not enough space, then next, vertically, 7-1/4 in. width; and finally across two pages (an unsatisfactory expedient)—9-1/2 in width. Most drawings can be adjusted to the first and most desirable arrangement, 4-1/2 in. wide. In the extreme case, a graph may be redrawn to a new scale to fit this need. When the author has a choice, he should avoid submitting small drawings that are narrower than they are high. These almost always require expensive type "run-arounds." Folding drawings are never used in Proceedings-Separates or Transactions.

20. Simplify results.—A graph of tabular data or test results (sometimes several sets on one drawing) is easy to handle. The main problem is to obtain a shape of cut that fits the printed page, as already described. A sketch of equipment, a construction drawing, or a map is in a separate category. Many authors take the easy course of submitting the nearest available print, intended originally for an entirely different—usually more detailed—purpose, when only a simple sketch is required to embody the salient features. Either a new drawing must be solicited or the available one simplified.

21. Omit details.—For example, over-all dimensions usually suffice to visualize the problem. Minor details can be eliminated. Color lines for differentiation are definitely not acceptable. Notes are omitted or transferred to the text, if important. Legends, of course, are included. Descriptive matter—particularly mathematical matter—is always incorporated in the text.

22. Redrawing at Headquarters.—As the drawings "tie in" with the paper intimately, the edited form of drawing is important. Since the redrawing and the making of final line cuts are time-consuming, as well as expensive, a real editing job on the drawings is essential.

23. Clear halftones required.—Photographs are not widely used because of the limitations of the thin (Bible-type) paper in Transactions. They should

never be included for appearance alone, but only when they add to the understanding of the paper, or eliminate descriptive text. Prints for copy should be on glossy paper, clear in detail, contrasting in lights and darks. Careless use of paper clips and pencil points can seriously mar a good print.

24. Acknowledgments are credit lines.—To be eligible for Transactions, the material (including illustrations) is expected to be cleared for unencumbered use by the authors, and thus released for publication without so-called "credit lines." When it is absolutely a necessity, acknowledgment can be made sparingly in a paragraph at the end of a paper—which would be excluded from the discussion.

Mathematics

25. Simplify equations.—Assume that the reader understands general mathematical derivations and that he does not need to see every step—simply the primary setup and the result. Whenever possible give references to standard textbooks and avoid standard developments. In long derivations, an intermediate form of equation may be considered justified. Higher mathematics is usually the most expensive text; its condensation is justified by cost as well as logic.

Where both exponents and subscripts are indicated, the printer's task can become complicated, especially if either is compounded, as a decimal power with a literal exponent. In extreme cases it pays to substitute a simple letter for the multiple superscript, with appropriate notation to that effect. Such standard ambiguities as $A/B(C + D)$ should read $\frac{A}{B(C + D)}$ to avoid being interpreted $\frac{A}{B}(C + D)$.

26. Clarify notation.—Hand-written mathematics must be edited carefully to distinguish between capital and lower case letters, particularly S, O, C, W, etc., as well as l and e. Even with typewriting, confusion is possible—for example, between letter l and numeral 1, letter o and numeral 0. Distinction is also necessary between a Roman letter designating a point and a similar italics letter indicating a quantity; between two letters indicating a line or distance and the same two indicating a product of two quantities. The editor must mark each individual case; it does not suffice to correct just the first appearance as typical.

Discussions

27. Regular treatment.—All the regular editing standards as to text, illustrations, tabulations, or mathematics apply equally to discussions. In addition there are special features that need separate emphasis in discussions.

28. Author sets scope.—The published paper governs and limits the discussion. Usually the paper sets up a series of arguments, which are open for comment, criticism, and correction. Only this series of arguments is to be considered. It is not permissible for a discusser to "drag in" a kindred subject just because it happens to interest him. Furthermore, since the author must by courtesy present a closure, it is unfair to ask him to rebut some irrelevent interpretation. Some means for enforcing limitations will be detailed.

29. Tie-in discussion to the paper.—The discusser is required to connect his comments by specific references to the main paper, citing the exact position of quoted matter. In this way the editor can judge if the comment is relevent. If such "tie-ins" are not given, it can be assumed that the connection is correspondingly weak and therefore suspect. Quoted matter from

sources other than the paper must always be identified by full footnote reference.

30. "Stick to the subject."—The general rules of debate control. Comments must adhere to the "question before the house"; otherwise they are "out of order." The editor acts as presiding officer or judge. He should eliminate the introduction of a side issue which may appear innocent but often is intended as a trap for the author. A digression may be permitted if its bearing on the main subject is obvious and constructive. The safe rule is to insist that the discusser "talk to the motion" and in general to discourage side issues—particularly those characteristic of Congressional "extension of remarks."

31. Monotony.—Discussions may be short and numerous—hence there is the danger that they may be too much alike externally. The sterotyped beginning is "This paper. . ." or "The author. . . . ." The editor will tactfully suggest alternatives.

32. Consecutive numbering.—The paper, the discussion, and the author's closure are considered as an entity. Reference can thus be made to any previous equation, table, illustration, or footnote, by number.

D. Indexing Standards

1. It is not practical to index the Proceedings-Separates. A comprehensive subject index is prepared of the papers in Transactions. This publication, therefore, becomes the reference volume to which members turn for the most important technical information in the literature of past years. An author index is also presented in each volume of Transactions.

2. Approximately once each decade, cumulative subject and author indexes are issued as a further service to members.

E. Reprints of Technical Papers

1. Proceedings-Separates are held in stock for single-copy sale, and for special orders in small quantity. Larger quantities (100 copies or more) can be supplied by placing special, written orders with the Manager of Technical Publications.

2. At the time of first appearance, five complimentary copies of a Proceedings-Separate will be supplied to each author. Two complimentary Discussion-Separates will be sent automatically to each discusser.

3. Reprint copies of a Transactions paper (including discussion) will be provided for single-copy sale. Individual authors are entitled to twenty-five complimentary reprint copies of such papers, and discussers will receive two complimentary copies each. When there are more than two co-authors of a paper, each will receive ten complimentary reprints from Transactions.

4. When Transactions papers are grouped together into a symposium, the entire symposium is treated as a single paper for reprinting purposes.

F. The Prize Competition

1. The rules and conditions that govern the award of Society prizes are published annually in the Official Register. For the most part, these prizes are awarded for the most excellent papers in Transactions.

2. With the photo-offset Proceedings-Separates to draw from, the selection of a paper for inclusion in Transactions is itself in the nature of an award. The mechanics of selecting papers for Transactions has been described.

3. When the makeup of a volume of Transactions has been determined, it will be delegated to a committee of three Society members appointed by the President. Their recommendations will serve as a guide, by the Board of

Direction, for the award of the Norman Medal, the J. James R. Croes Medal, the Thomas Fitch Rowland Prize, the James Laurie Prize, the Arthur M. Wellington Prize, and the Collingwood Prize for Juniors.

4. Division prizes for excellent Transactions papers are suggested by respective Division committees. These prizes are: the Karl Emil Hilgard Prize and the J. C. Stevens Award (Hydraulics Division); the Rudolph Hering Medal (Sanitary Engineering Division); the Leon S. Moisseiff Award (Structural Division); and the Rickey Medal (Power Division).

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